

USSR

CHUKHROV, M. V., Modification of Magnesium Alloys, Moscow, Metallurgiya, 1972, 176 pp

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CHUKHROV, M. V., Modification of Magnesium Alloys, Moscow, Metallurgiya, 1972, 176 pp

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USSR

ANSYUTINA, A. Ye., SOKOLOVA, A. I., SHVETSOV, P. N., ESKIN, G. I., GUR'YEV, I. I.,  
CHUKHROV, M. V., and AL'TMAN, M. B., Moscow

"The Effect of Ultrasonic Treatment on the Structure and Properties of Ingots  
of a Magnesium Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 70, pp 76-81

Abstract: Results are presented of an investigation of the effect of ultrasonic treatment on the crystallization process of a flat ingot (550 x 140 mm) of the MA2-1 alloy of the Mg-Al-Zn-Mn system. The method of introducing ultrasonic vibrations into the hole of the ingot is described and the macrostructure and microstructure of ingots cast with and without ultrasonic treatment are shown. Ultrasonic treatment of the MA2-1 alloy ingot during crystallization under continuous casting conditions makes it possible to comminute the structure, to decrease the H-content by a factor of 2, and to improve the mechanical properties by 10-20%. To make the ultrasonic treatment efficient, it is necessary to locate the emitter at  $1/3$  the depth of the hole and to maintain the relation of the sound emission surface to the molten metal surface  $> 40$ .  
1/2

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USSR

ANSYUTINA, A. Ye., et al, Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug  
70, pp 76-81

The development of cavitation in the molten metal is the determinant in the  
crystallization mechanism of magnesium alloy ingots under the effect of ultra-  
sound.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ISOLATION OF ENZYMES SPLITTING A CARBOHYDRATE PEPTIDE BOND OF THE  
AMIDE TYPE FROM AN EXTRACT OF LYMNAEA STAGNALIS -U-  
AUTHOR-(03)-CHUKHROVA, A.I., KAVERZNEVA, YE.D., TYUTRINA, G.V.  
COUNTRY OF INFO--USSR  
SOURCE--BIOKHIMIYA 1970, 35(1), 95-101  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROCESSED PLANT PRODUCT, ENZYME ACTIVITY, CHEMICAL SEPARATION,  
CARBOHYDRATE, PEPTIDE, AMIDE, ELECTROPHORESIS, ULTRACENTRIFUGE,  
PROTEOLYTIC ENZYME, SNAIL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/0636 STEP NO--UR/0218/70/035/001/0095/0101  
CIRC ACCESSION NO--AP0117862  
UNCLASSIFIED

2/2 012  
CIRC ACCESSION NO--AP0117862

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A THERMOSTABLE ENZYME PREPN. SPLITTING THE GLUCOSE DIAMINE LINKAGE IN GLYCOPEPTIDES WAS ISOLATED FROM THE OVOMUCOID OF POND SNAIL (L. STAGNALIS) AFTER FRACTIONAL SALTING OUT, HEAT INACTIVATION OF PART OF THE ACCOMPANYING ENZYMES, AND PURIFICATION ON SEPHADEX. FURTHER SEPN. ON SEPHADEX YIELDED A PREPN. HOMOGENEOUS ON ELECTROPHORESIS AND ULTRACENTRIFUGATION, AND WHICH DID NOT ACT ON BETA, D, GLUCOSIDES AND PEPTIDES. COMPARISON OF THE GLUCOSIDE AMIDASE ACTIVITY AT VARIOUS STAGES OF PURIFICATION INDICATED THAT THE ISOLATED ENZYME SPLITS THE POLYSACCHARIDE ASPARAGINE LINKAGE IN GLYCOPEPTIDES ONLY WHEN THE AMINO AND CARBOXYL GROUPS OF THE AMINO ACID ARE FREE. IN COMPS. WITH LONGER PEPTIDE CHAINS THIS SPLITTING OCCURRED ONLY AFTER PRELIMINARY ACTION OF PEPTIDASES PRESENT IN THE SNAIL EXT. THESE ENZYMES PROBABLY FORM A COORDINATED ENZYME SYSTEM. FACILITY:  
INST. ORG. CHEM., MOSCOW, USSR.

UNCLASSIFIED

Pathology

USSR

UDC 616.981.553-07.616.831-073.97

CHUKHROVA V. A., Institute of Neurology, Academy of Medical Sciences USSR

"Changes in Brain Electrical Activity During Botulism"

Moscow, Zhurnal Nevropatologii i Psikiatrii imeni S. S. Korsakov, No 1, 1970, pp 52-55

Abstract: In 12 patients with severe forms of botulism, a lowering of the level of brain electrical activity, absence of the alpha rhythm on the EEG, and presence of slow waves, chiefly of the low-voltage theta type, were characteristic. These indices returned to normal within two months. Examination of other patients with myasthenia, amyotrophic lateral sclerosis, polyradiculoneuritis, and other neurological disorders failed to reveal a similar picture of EEG changes. Apparently botulinus toxin exerts a specific effect on certain neurons of the brainstem reticular formation, which produce the above-mentioned shifts in the dynamics of the brain bioelectric potentials.

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AA0052685

CHUKICHEV A.N.  
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-70

244204 FOREST FIRES EXTINGUISHING involves  
using a machine which simultaneously  
digs a trench at the fire boundary and throws  
earth on to the advancing fire front. The  
machine comprises a motor 1, transmission 2,  
working mechanism 3 and suspension 4. The working  
mechanism 3 includes symmetrical cutting 9 and  
earth throwing tools 10 and a toothed wheel 11 which  
is used to control the depth of the trench.

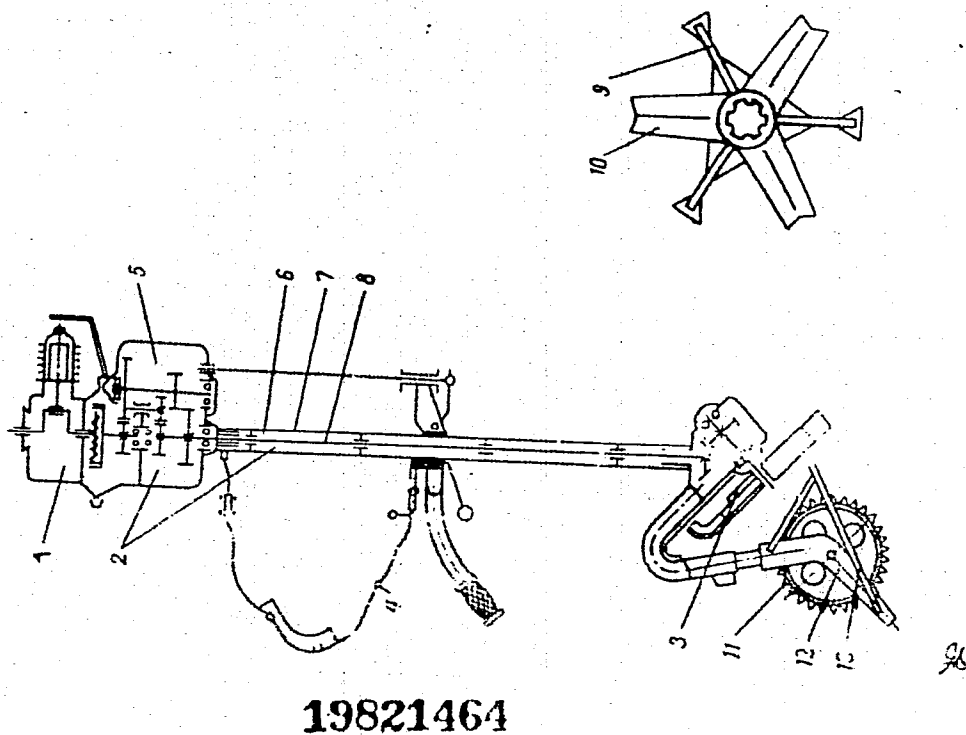
16.11.67. as 1197269/29-14, VALDAYSKIY, N.P.  
CHUKICHEV, A.N. Leningrad Forestry Res. Inst.  
(8.10.69) Bul. 17/14.5.69. Class 84d, Int. Cl.  
E 02f.

Leningradskiy Nauchno-Issledovatel'skiy  
Institut Lesnogo Khozyaystva

19821463



AA0052685



USSR

UDC 537.311.55:546.28

UVAROV, YE. P., ~~CHUMICHEV, M.V.~~

"Investigation Of Radiation Defects In Silicon Doped With Gold And Phosphorus And Irradiated By Electrons And Neutrons"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minsk, "Nauka i tekhn.," 1970, pp 81-90 (From RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2527)

Translation: The effect of atoms of Au on the formation of radiation defects in n-type Si is investigated. Measurements of the recession velocities of carriers and the temperature dependence of the Hall coefficient show that the detection of Au in the nodes of the crystal lattice of silicon does not lead to significant changes of the effectiveness of introduction of radiation defects. A small increase is detected of the lifetime of unbalanced charge carriers in Si doped with Au with small doses of irradiation by electrons with an energy of 1 Mev and by reactor neutrons. It is shown that the principal changes of the voltampere characteristics of p-n junctions prepared from this material result from changes of the lifetime of unbalanced charge carriers. 4 ill. 1 tab. 6 ref. Summary.

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- 58 -

1/2 042 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--GADOLINIUM SPECTRA IN ALUMINUM AND YTTRIUM GARNET SINGLE CRYSTALS  
-U-  
AUTHOR--(03)-AZAMATOV, Z.T., ARSENYEV, P.A., CHUKICHEV, M.V.  
COUNTRY OF INFO--USSR  
SOURCE--OPT. SPEKTROSK. 1970, 28(2), 289-91  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--GARNET, ALUMINUM COMPOUND, YTTRIUM COMPOUND, GADOLINIUM,  
EMISSION SPECTRUM, SPECTROSCOPIC ANALYSIS, LUMINESCENCE, SINGLE CRYSTAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/0088 STEP NO--UR/0051/70/023/002/0289/0291  
CIRC ACCESSION NO--AP0054885  
UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUMINESCENCE, ABSORPTION, AND STIMULATED EMISSION OF GD PRIME3 POSITIVE IN AL Y GARNET SINGLE CRYSTALS WERE INVESTIGATED. THE SPECIMEN CONTAINED GD IN THE AMT. CORRESPONDING TO THE FORMULA Y SUB2.95 GD SUB0.05 AL SUB5.0 SUB12. IN THE ABSORPTION SPECTRUM, BANDS REPRESENTING THE TRANSITIONS FROM THE PRIME6 P SUBSEVEN-HALVES, PRIME6 P SUBFIVE-HALVES, AND PRIME6 I SUBSEVEN-HALVES, STATES TO THE PRIME8 S SUBSEVEN-HALVES GROUND STATE WERE OBSD. THESE EXCITED STATES ARE SPLIT INTO 4, 3, AND 4 DOUBLETS, RESP. THE LUMINESCENCE SPECTRUM CORRESPONDED TO THE PRIME6 P SUBSEVEN-HALVES YIELDS PRIME8 S SUBSEVEN-HALVES TRANSITION. THE EMISSION SPECTRUM OF GD, INDUCED BY A 200 KEV ELECTRON BEAM, WAS DETD. AT ROOM AND LIQ. N TEMPS. THE RESULTING LUMINESCENCE CONSISTED OF WIDE, POORLY RESOLVED BANDS, INTERPRETED AS THE TRANSITIONS TO THE GROUND STATE FROM THE LEVELS: PRIME6 P SUBSEVEN-HALVES, PRIME6 P SUBFIVE-HALVES, PRIME6 P SUBTHREE-HALVES, PRIME6 I SUBSEVEN-HALVES, PRIME6 D SUBNINE-HALVES, AND PRIME6 D SUBSEVEN-HALVES. INCREASING THE ENERGY OF THE EXCITING ELECTRONS INCREASED THE INTENSITY OF THE PRIME6 P SUBSEVEN-HALVES YIELDS PRIME8 S SUBSEVEN-HALVES TRANSITION. THE LIFETIME OF THE PRIME6 P SUBSEVEN-HALVES LEVEL, 8 MUSEC, WAS REDUCED TO 3 MUSEC IN THE PRESENCE OF 0.15PERCENT TB TOGETHER WITH GD IN THE GARNET.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SPECTRAL PROPERTIES OF DYSPROSIUM ION (DY PRIME3POSITIVE) IN A  
YTTRIUM ALUMINUM GARNET LATTICE  
AUTHOR--KASINTEV, P.A., BINERT, K.E., CHUKICHEV, M.V.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 76-80  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--SPECTROSCOPY, DYSPROSIUM, YTTRIUM COMPOUND, ALUMINUM COMPOUND,  
CRYSTAL LATTICE STRUCTURE, LUMINESCENCE, GARNET  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0958 STEP NO--UR/0139/70/013/002/0076/0080  
CIRC ACCESSION NO--AT0105827  
UNCLASSIFIED

ABSTRACT. THE ABSORPTION AND LUMINESCENCE SPECTRA OF DY PRIME3 POSITIVE IN A Y-AL GARNET IN LIQ. N WERE DETD. FROM THE DATA THE DIAGRAM OF THE ENERGY LEVELS PRIME4 F SUB9HALVES, PRIME6 F SUBONEHALVE PRIME6 F SUB3HALVES, PRIME6 F SUBSEVENHALVES, AND PRIME6 F SUBFIFTEENHALVES WAS DERIVED.

UNCLASSIFIED

min after the catalyst had been reduced 2 hr with H<sub>2</sub> at 300 psi, gave  
BzH and 30-60%  $RC_6H_4N:CHPh$  (R = H, o-Me, p-Me, o-Cl,  
p-Cl, or p-Br).  
G. M. Kosolapoff

REEL/FRAME

di 7

Acc. Nr:

AP0048937

Abstracting Service

CHEMICAL ABST. 5-70

Ref. Code:

418 0079

(1)

1000186 Catalytic synthesis of aromatic Schiff's bases.



Pathology

USSR

UDC 616.981.553-07.616.831-073.97

CHUKHROVA, V. A., Institute of Neurology, Academy of Medical Sciences USSR

"Changes in Brain Electrical Activity During Botulism"

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Abstract: In 12 patients with severe forms of botulism, a lowering of the level of brain electrical activity, absence of the alpha rhythm on the EEG, and presence of slow waves, chiefly of the low-voltage theta type, were characteristic. These indices returned to normal within two months. Examination of other patients with myasthenia, amyotrophic lateral sclerosis, polyradiculoneuritis, and other neurological disorders failed to reveal a similar picture of EEG changes. Apparently botulinus toxin exerts a specific effect on certain neurons of the brainstem reticular formation, which produce the above-mentioned shifts in the dynamics of the brain bioelectric potentials.

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AA0052685

CHUKICHEV A.N.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-70

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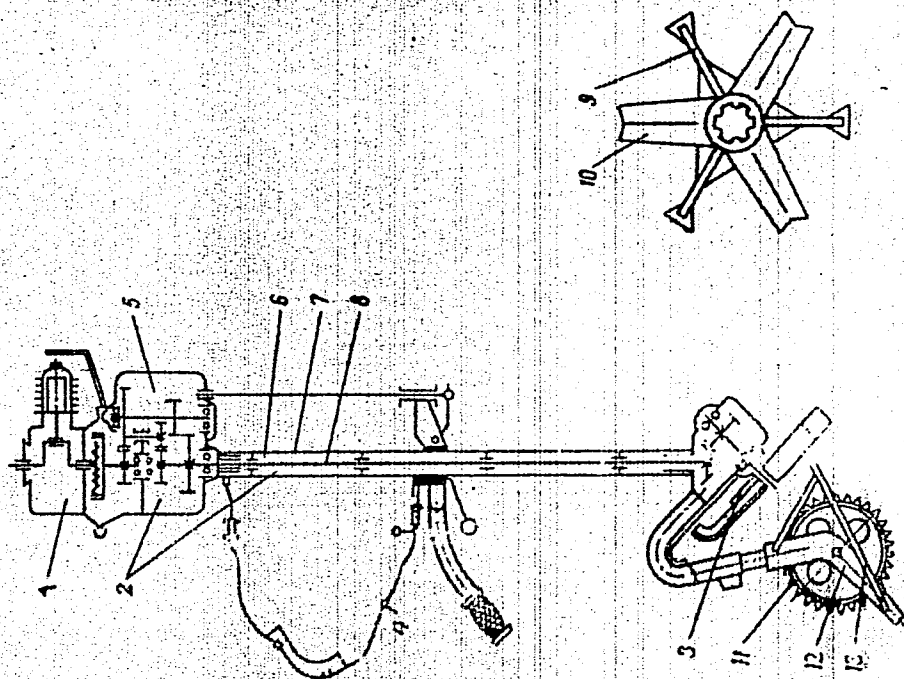
FOREST FIRES EXTINGUISHING involves  
using a machine which simultaneously  
digs a trench at the fire boundary and throws  
earth on to the advancing fire front. The  
machine comprises a motor 1, transmission 2,  
working mechanism 3 and suspension 4. The working  
mechanism 3 includes symmetrical cutting 9 and  
earth throwing tools 10 and a toothed wheel 11 which  
is used to control the depth of the trench.

16.11.67. as 1197269/29-14, VALDAYSKIY, N.P.  
CHUKICHEV, A.N. Leningrad Forestry Res. Inst.  
(8.10.69) Bul. 17/14.5.69. Class 84d, Int. Cl.  
E 02f.

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AA0052685



19821464

USSR

UDC 537.311.33:546.28

UVAROV, YE. F., ~~CHUKICHEV, M. V.~~

"Investigation Of Radiation Defects In Silicon Doped With Gold And Phosphorus And Irradiated By Electrons And Neutrons"

V sb. Radiatsion. fiz. nemet. kristalloy (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minsk, "Nauka i tekhn.," 1970, pp 81-90 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B27)

Translation: The effect of atoms of Au on the formation of radiation defects in n-type Si is investigated. Measurements of the recession velocities of carriers and the temperature dependence of the Hall coefficient show that the detection of Au in the nodes of the crystal lattice of silicon does not lead to significant changes of the effectiveness of introduction of radiation defects. A small increase is detected of the lifetime of unbalanced charge carriers in Si doped with Au with small doses of irradiation by electrons with an energy of 1 Mev and by reactor neutrons. It is shown that the principal changes of the voltampere characteristics of p-n junctions prepared from this material result from changes of the lifetime of unbalanced charge carriers. 4 ill. 1 tab. 6 ref. Summary.

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- 58 -

1/2 042  
TITLE--GADOLINIUM SPECTRA IN ALUMINUM AND YTTRIUM GARNET SINGLE CRYSTALS  
-U-  
AUTHOR--(03)-AZAMATOV, Z.T., ARSENYEV, P.A., CHUKICHEV, M.V.  
COUNTRY OF INFO--USSR  
SOURCE--OPT. SPEKTROSK. 1970, 28(2), 289-91  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--GARNET, ALUMINUM COMPOUND, YTTRIUM COMPOUND, GADOLINIUM,  
EMISSION SPECTRUM, SPECTROSCOPIC ANALYSIS, LUMINESCENCE, SINGLE CRYSTAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1984/0088  
STEP NO--UR/0051/70/028/002/0289/0291  
00054885

TITLE--SPECTRAL PROPERTIES OF DISTORTED  
YTTRIUM ALUMINUM GARNET LATTICE -U-  
AUTHOR--(04)-AZAMATOV, Z.T., ARSENYEV, P.A., BINERT, K.E., CHUKICHEV, M.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 76-80

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SPECTROSCOPY, DYSPROSIUM, YTTRIUM COMPOUND, ALUMINUM COMPOUND,  
CRYSTAL LATTICE STRUCTURE, LUMINESCENCE, GARNET

CONTROL MARKING--NO RESTRICTIONS

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200610013-6

PRIME6 D SUBSEVEN-HALVES, INCREASING THE ENERGY OF THE EXCITING ELECTRONS INCREASED THE INTENSITY OF THE PRIME6 P SUBSEVEN-HALVES YIELDS. THE LIFETIME OF THE PRIME6 P SUBSEVEN-HALVES LEVEL, 8 MUSEC, WAS REDUCED TO 3 MUSEC IN THE PRESENCE OF 0.15PERCENT TB TOGETHER WITH GD IN THE GARNET.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200610013-6"

"APPROVED FOR RELEASE: 08/09/2001      CIA-RDP86-00513R002200610013-6

THE DATA THE DIAGRAM OF THE ENERGY LEVELS PRIME6 F SUB7HALVES, PRIME6 F SUBONEHALVE PRIME6 F SUB3HALVES, PRIME6 F SUBSEVENHALVES, AND PRIME6 F SUBFIFTEENHALVES WAS DERIVED.

APPROVED FOR RELEASE: 08/09/2001      CIA-RDP86-00513R002200610013-6"



USSR

UDC 514.183:541.124/128

ZARIF'YANTS, YU. A., KARYAGIN, S. N., KISELEV, V. F., KHRUSTALEVA, S. V., and  
CHUKIN, G. D., Moscow State University imeni M. V. Lomonosov

"Possibility of the Control of Binding Forms of Adsorbed Molecules by Means of  
a Change in the Electronic State of the Semiconductor Surface"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 109-112

Abstract: IR and EPR spectra of p-benzoquinone (BQ) molecules adsorbed on  
rutile were studied. First passage of BQ over rutile powder leads to the  
the appearance of two bands in the IR spectrum at 1505 and 1470  $\text{cm}^{-1}$ . The first  
band was assigned to  $\text{>C=O}$  grouping of the BQ molecule bound to coordination  
unsaturated  $\text{Ti}^{3+}$  atoms. This band is quite stable, even after heating the com-  
plex to 400° in vacuum it does not disappear. The 1470  $\text{cm}^{-1}$  band was assigned  
to an anion radical of BQ formed by a transfer of an electron from the solid  
body directly onto the orbitals of the adsorbed molecule. With more complete  
saturations more bands appear: 1675  $\text{cm}^{-1}$  assigned to BQ molecules bound with  
weak van der Waal forces to the surface, 1657  $\text{cm}^{-1}$  -- due to the molecules  
hydrogen bonded to hydroxyl groups. Adsorption of BQ results in a negative  
charge on the surface of rutile. Population of the surface levels increases  
with increased Fermi levels. It was shown that with higher degree of reduction  
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USSR

ZARIF-YANTS, YU. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 109-112

the intensity of the  $1470\text{ cm}^{-1}$  band increases, while oxidation of the sample (lowering Fermi levels) prior to the adsorption of BQ results in complete disappearance of this band. When the rutile specimen was heated to  $200^\circ$  (after passage of BQ), the  $1675$  and  $1657\text{ cm}^{-1}$  bands disappeared, the intensity of  $1470\text{ cm}^{-1}$  bands increased, and that of  $1505\text{ cm}^{-1}$  decreased respectively. At  $400^\circ$  the  $1470\text{ cm}^{-1}$  band exceeds substantially the intensity of the  $1505\text{ cm}^{-1}$  band. Also, rutile specimens irradiated with a UV lamp (filter transparent in the  $400\text{-}700\text{ m}\mu$  region) shows identical behavior. Thus it was possible to stimulate a change in binding form of the molecules adsorbed on the surface, reflected by the IR spectra, by generating excess carriers through the illumination of solid body.

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- 2 -

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--INTERACTION OF H SUB2 O, D SUB2 O, AND HDO WITH THE SURFACE OF AN  
ALUMINOSILICATE CATALYST -U-  
AUTHOR--IGNATYEVA, L.A., CHUKIN, G.D., YUKHNEVICH, G.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 318-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--WATER, DEUTERIUM OXIDE, ADSORPTION, ALUMINUM SILICATE, IR  
SPECTROSCOPY, CATALYST, HYDROGEN BONDING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1989/0238 STEP NO--UR/0368/70/012/002/0318/0322  
CIRC ACCESSION NO--AP0106894  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MECHANISM OF ADSORPTION OF H SUB2 O, D SUB2 O, AND HDO ON ALUMINOSILICATE CATALYST (12.7PERCENT GAMMA,AL SUB2 O SUB3 WITH SP. SURFACE 450 M PRIME2-G, DEHYDRATED UNDER VACUUM AT 550DEGREES FOR 6 HR) WAS EXAMD. BY MEANS OF IR SPECTROSCOPY. THE SPECTRA SHOWED THAT AT SMALL CONCNS. WATER WAS ADSORBED IN THE FORM OF A MOL., I.E. COORDINATION BONDS BETWEEN O AND SI WERE FORMED. THIS WATER WAS THERMOSTABLE, REMAINING ON THE SURFACE AT 400-500DEGREES. FURTHER MOLLS. WERE ADSORBED VIA H BONDS AND WERE DESORBED AT SMALLER THAN OR EQUAL TO 200DEGREES.

UNCLASSIFIED

UDC: 668.3/.4

USSR

SEVERNYY, V. V., MINSKER, Ye. I., CHUKIN, V. S., KVASNOVSKAYA, N. V.

"Optical Elastic Adhesives Based on Low-Molecular Polyorganosiloxane Rubber Stocks"

Moscow, Pribery i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 176-179

Abstract: The paper presents the results of research on the optical, physico-mechanical and thermomechanical properties of elastic self-vulcanizing cold-setting "Elastosil" cements recommended for use in the optical systems of instruments (in Cerenkov and scintillation counters in particular) at working temperatures from -80 to +200°C.

1/1

Steels

USSR

UDC 621.785:66.096.5

IVANTSOV, G. I., SHIREMT, M. S., CHUKIN, V. V., and KASHIN, YU. A., Magnitogorsk Mining and Metallurgy Institute imeni G. I. Nosov

"New Quenching Medium"

Moscow, Metallovedeniye, No 5, May 70, pp 54-57

Abstract: To prevent cracking and distortion of steel parts, the quenching medium must have a controlled cooling rate. A medium is proposed which used solid particles and water with air being forced through the porous material as bubbles into a cylinder filled with water and the solid particles. This places the solid particles in a suspended state of high agitation. A small amount of a flotation agent may be added if necessary. In this work aluminum filings, granulated cinders (1.5-2.0 mm mesh), glass marbles (1.5 mm diameter), and flotation additives--pine oil or propylene oxide and butanol (OPSB) in quantities of 0.01 g/l--were used. Upon adding the flotation agent and turning on the air flow, three layers were formed in the cooling medium column: top layer--a froth; middle layer--air-water mixture with a small concentration of rapidly moving particles; and the bottom layer--water-air mixture with a high concentration of slow-moving particles. The cooling rate can be regulated by changing the ratios of solid particles and water and by altering the air flow. The particle-to-water ratios used were 1/10 and 1/5, and the air flow varied from 0.3 to 0.5 l/cm<sup>2</sup>-min.

USSR

IVANTSOV, G. I., et al., *Metallovedeniye*, No 5, May 70, pp 54-57

Bolts and spikes made from 40 Kh steel were heated to 840-860°C and quenched in oil, followed by tempering. The spikes were tempered at 240-280°C to a hardness of 44-56 (Rockwell C) and subjected to a bend angle of 15° without fracture. The bolts were tempered at 500° C to a Brinell hardness of 269-388 with a tensile strength of 120 kg/mm<sup>2</sup> minimum.

Tests showed that 10 bolts were quenched to 20°C in stirred water and that four of them had cracks. Ten bolts oil quenched to 40°C had no cracks. Of ten bolts quenched in the above-described quenching medium with a 1/10 ratio, one showed cracks; 50 bolts quenched in the medium with a 1/5 ratio and the OPSE flotation agent showed no cracks. The bolts had a uniform sorbite structure and a tensile strength of 125-135 kg/mm<sup>2</sup>.

Quenching the spikes in the new medium resulted in a higher and more uniform hardness and a larger bend angle before fracture (60-100°) than when spikes were quenched in oil.

control for medium-range prediction may consist of using the most recent years for the learning sequence and data for several years over a time equal to one-half the "coherence time" for a check sequence.

1/1



USSR

UDC 62-50.23

IVAKHNENKO, A. G., ~~CHUKIN, YU. V.~~, Kiev

"Purposeful Regularization in Problems of Short-Term and Medium-Range Prediction Solved by Distinguishing the Trend of Optimal Complexity"

Kiev, Avtomatika, No 1, 1972, pp 50-57

Abstract: A calculation of an example of predicting the degree of load of England's production showed that

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ZARIF\*YANTS, YU. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 109-112

the intensity of the  $1470\text{ cm}^{-1}$  band increases, while oxidation of the sample (lowering Fermi levels) prior to the adsorption of BQ results in complete disappearance of this band. When the rutile specimen was heated to  $200^\circ$  (after passage of BQ), the  $1675$  and  $1657\text{ cm}^{-1}$  bands disappeared, the intensity of  $1470\text{ cm}^{-1}$  bands increased, and that of  $1505\text{ cm}^{-1}$  decreased respectively. At  $400^\circ$  the  $1470\text{ cm}^{-1}$  band exceeds substantially the intensity of the  $1505\text{ cm}^{-1}$  band. Also, rutile specimens irradiated with a UV lamp (filter transparent in the  $400\text{-}700\text{ m}\mu$  region) shows identical behavior. Thus it was possible to stimulate a change in binding form of the molecules adsorbed on the surface, reflected by the IR spectrum, by generating excess carriers through the illumination of solid body.

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--INTERACTION OF H SUB2 O, D SUB2 O, AND HDO WITH THE SURFACE OF AN  
ALUMINOSILICATE CATALYST -U-  
AUTHOR--IGNATYEVA, L.A., CHUKIN, G.D., YUKHNEVICH, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 318-22

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--WATER, DEUTERIUM OXIDE, ADSORPTION, ALUMINUM SILICATE, IR  
SPECTROSCOPY, CATALYST, HYDROGEN BONDING

CONTROL MARKING--NO RESTRICTIONS

PROXY REEL/FRA--1989/0238

CIRC ACCESSION NO--AP0106896

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106894

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A MECHANISM OF ADSORPTION OF H  
SUB2 O, D SUB2 O, AND HDO ON ALUMINOSILICATE CATALYST (12.7PERCENT  
GAMMA, AL SUB2 O SUB3 WITH SP. SURFACE 450 M PRIME2-G, DEHYDRATED UNDER  
VACUUM AT 550DEGREES FOR 6 HR) WAS EXAMD. BY MEANS OF IR SPECTROSCOPY.  
THE SPECTRA SHOWED THAT AT SMALL CONCNS. WATER WAS ADSORBED IN THE FORM  
OF A MOL., I.E. COORDINATION BONDS BETWEEN O AND SI WERE FORMED. THIS  
WATER WAS THERMOSTABLE, REMAINING ON THE SURFACE AT 400-500DEGREES.  
FURTHER MOLLS. WERE ADSORBED VIA H BONDS AND WERE DESORBED AT SMALLER  
THAN OR EQUAL TO 200DEGREES.

UNCLASSIFIED

USSR

UDC: 668.3/.4

SEVERNYY, V. V., MINSKER, Ye. I., CHUKIN, V. S., KVASNOVSKAYA, N. V.

"Optical Elastic Adhesives Based on Low-Molecular Polyorganosiloxane Rubber Stocks"

Moscow, Pribery i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 176-179

Abstract: The paper presents the results of research on the optical, physico-mechanical and thermomechanical properties of elastic self-vulcanizing cold-setting "Elastosil" cements recommended for use in the optical systems of instruments (in Cerenkov and scintillation counters in particular) at working temperatures from -80 to +200°C.

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Steels

USSR

UDC 621.785:66.096.5

IVANTSOV, G. I., SHIRENT, M. S., CHUKIN, V. V., and KASHIN, YU. A., Magnitogorsk Mining and Metallurgy Institute imeni G. I. Nosov

"New Quenching Medium"

Moscow, Metallovedeniye, No 5, May 70, pp 54-57

**Abstract:** To prevent cracking and distortion of steel parts, the quenching medium must have a controlled cooling rate. A medium is proposed which used solid particles and water with air being forced through the porous material as bubbles into a cylinder filled with water and the solid particles. This places the solid particles in a suspended state of high agitation. A small amount of a flotation agent may be added if necessary. In this work aluminum filings, granulated cinders (1.5-2.0 mm mesh), glass marbles (1.5 mm diameter), and flotation additives--pine oil or propylene oxide and butanol (OPSB) in quantities of 0.01 g/l--were used. Upon adding the flotation agent and turning on the air flow, three layers were formed in the cooling medium column: top layer--a froth; middle layer--air-water mixture with a small concentration of rapidly moving particles; and the bottom layer--water-air mixture with a high concentration of slow-moving particles. The cooling rate can be regulated by changing the ratios of solid particles and water and by altering the air flow. The particle-to-water ratios used were 1/10 and 1/5, and the air flow varied from 0.3 to 0.5 l/cm<sup>2</sup>-min.

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IVANTSOV, G. I., et al., Metallovedeniye, No 5, May 70, pp 54-57

Bolts and spikes made from 40 Kh steel were heated to 840-860°C and quenched in oil, followed by tempering. The spikes were tempered at 240-280°C to a hardness of 44-56 (Rockwell C) and subjected to a bend angle of 15° without fracture. The bolts were tempered at 500° C to a Brinell hardness of 269-388 with a tensile strength of 120 kg/mm<sup>2</sup> minimum.

Tests showed that 10 bolts were quenched to 20°C in stirred water and that four of them had cracks. Ten bolts oil quenched to 40°C had no cracks. Of ten bolts quenched in the above-described quenching medium with a 1/10 ratio, one showed cracks; 50 bolts quenched in the medium with a 1/5 ratio and the OPSPB flotation agent showed no cracks. The bolts had a uniform sorbite structure and a tensile strength of 125-135 kg/mm<sup>2</sup>.

Quenching the spikes in the new medium resulted in a higher and more uniform hardness and a larger bend angle before fracture (60-100°) than when spikes were quenched in oil.

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UDC 62-50.23

IVAKHNENKO, A. G., CHUKIN, YU. V., Kiev

"Purposeful Regularization in Problems of Short-Term and Medium-Range Prediction Solved by Distinguishing the Trend of Optimal Complexity"

Kiev, Avtomatika, No 1, 1972, pp 50-57

Abstract: A calculation of an example of predicting the degree of load of England's production showed that by selecting certain methods of purposeful control, the accuracy of medium-range prediction for 3-5 years can be raised almost to the accuracy of short-term prediction for only one year. Purposeful control for medium-range prediction may consist of using the most recent years for the learning sequence and data for several years over a time equal to one-half the "coherence time" for a check sequence.

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Acc. Nr:

AP0048937

Abstracting Service:

CHEMICAL ABST: 5-70

Ref. Code:

UR 0039

100217f Catalytic synthesis of aromatic Schiff's bases.  
Kozlov, N. S.; Pak, V. D.; Chuklinov, L. V. (Perm. Sel'sko-  
khoz. Inst., Perm, USSR). *Zh. Obshch. Khim.* 1970, 40(1),  
194-5 (Russ). Passing 1:3 (molar)  $\text{RC}_6\text{H}_4\text{NO}_2\text{-PhCH}_2\text{OH}$  over  
com. catalyst of Cu-promoted  $\text{Al}_2\text{O}_3$  at  $340\text{-}50^\circ/\text{l atm}$  at 0.4 ml/  
min after the catalyst had been reduced 2 hr with H at  $300^\circ$ , gave  
BzH and 30-60%  $\text{RC}_6\text{H}_4\text{N:CHPh}$  (R = H, o-Me, p-Me, o-Cl,  
p-Cl, or p-Br).  
G. M. Kosolapoff

REEL/FRA  
19800709

Powder Metallurgy

USSR

UDC 621.762.4.001

~~CHUKMASOV~~ S. F., and ZAZIMKO, A. I.

"Forces Acting in a Closed Die During Compacting of Porous Mass"

Metallurgiya i koksokhimiya. Resp. mexhved. nauchno-tekhn sb. (Metallurgy and Coke Chemistry--republic interdepartmental scientific research collection of works), 1970, vyp 18, pp 93-96 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G284)

Translation: Results are presented of the experimental investigation of the process of impact compacting of porous masses-shavings, powders, etc. A description is given of a unit for experimental determination of the force conditions of the process of compacting, and graphs of the process of compacting are presented, which give a complete picture concerning the relationship between the forces acting in the closed die. 5 ill., 1 table.

Authors' abstract

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Lubricants and Lubrication

USSR

CHUKMASOV, S. F., VYAZOVAYA, I. V.

"The Wettability of Bearings With Liquid Lubricants"

Dnepropetrovsk, Metallurgicheskaya I Gornorudnaya Promyshlennost', No 1, Jan-Feb 70, pp 71-72

Abstract: The Petrov criterion, the ratio of the interaction of the lubricant with the shaft metal to the interaction of the lubricant with the bearing material or, which amounts to the same thing, the ratio of the wettability of the shaft with the lubricant to the wettability of the bearing material with the same lubricant, can be used in selection of material for shaft-lubricant-bearing systems with considerable success. It is useful to create a system of components such that the Petrov criterion lies within the range of optimal values. This allows the durability and reliability of the units to be improved. The authors performed laboratory tests of the wettability of a shaft metal (type 45 steel) and bearing metal

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CHUKMASOV, S. F., VYAZOVAYA, I. V., Metallurgicheskaya I  
Gornorudnaya Promyshlennost', No 1, Jan-Feb 70, pp 71-72

(type B16 Babbit) with various liquid mineral oils. The minimum values of  $K_p$  were produced for types IS-45 and P-28 lubricants, which were recommended for the friction unit in question.

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Public Health, Hygiene and Sanitation

USSR

UDC 612.8+612.766.1

CHUKMASOVA, G. T., DENYSENKO, N. M., and LEKHAN, V. M., Dnepropetrovsk Medical Institute, Dnepropetrovsk

"Heavy and Tense Work of Some Professional Workers at Automated Plants"

Kiev, Fiziologichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 554-559

Abstract: Work of operators controlling the performance of automatic instruments and of workers doing physical work at the same production lines is compared. Eight professions involving 124 individuals were analyzed. Physiological studies were carried out 4-5 times per shift, and ergonomic studies, during the entire shift. Despite a difference in assignment of two groups of operators at two different plants their work required constant attention accompanied by emotional tension without interruptions in the workload per shift. At the end of the shift they responded less accurately to their assignment and paid less attention. The pulse rate in both groups was accelerated almost identically despite the fact that one group carried out its assignment while seated. Work of both groups was classified as tense. Workers doing only physical work (different professions) requiring the use of different muscles lost their work productivity level at the end of the shift, their pulse rate averaged 97-106 beats/min. Both groups, operators and workers doing physical work, 1/2

USSR

CHUKMASOVA, G. T., et al., Fiziologichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 554-559

were tired and lost some of their productivity. But these conditions had different causes: in the first case by constant attention while watching performance of different instruments, and in the second case, simple physical exhaustion. The authors see a need for a healthy organization of the work and rest hours to eliminate disturbances in the work procedures.

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USSR

UDC 546.185:547.245

VOLODIN, A. A., KIRKOV, V. V., KORSHAK, V. V., FILIPPOV, YE. A., CHUKOVA, V. M.

"Synthesis of Cyclolinear Alkoxyphosphazenes and an Investigation of Their Reaction with Triphenylchlorosilane"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1503-1506

Abstract: Alkoxy derivatives of cyclolinear type were synthesized by alcoholysis of 2,2'-bis(trichlorophosphazene)tetrachlorocycletriphosphazetione in the presence of triethyl amine. The resultant alkoxyphosphazenes are yellowish liquids. The alkoxyphosphazenes react with triphenylchlorosilane when heated above 50°C with release of alkyl chloride and formation of the corresponding siloxy derivative. The reaction products from equimolecular quantities of initial reagents are brown viscous liquids which dissolve in benzene. Analysis of the conditions of the reaction and kinetic data indicate that replacement of the alkyl groups by the triphenylsilyl group takes place in the side chain.

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1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--POSSIBLE CASE OF VIOLATION OF THE INDEPENDENCE OF COMPOUND NUCLEUS  
DECAY OF THE INPUT CHANNEL SPIN -U-  
AUTHOR--(05)--KARADZHEV, K.V., MANKO, V.I., PERSESYAN, A.N., CHUKREEV, F.E.,  
KURCHATOV, I.V.  
COUNTRY OF INFO--USSR  
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 88-92 (JAN. 1970)  
DATE PUBLISHED---JAN70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ANGULAR DISTRIBUTION, NUCLEAR SPIN, COMPOUND NUCLEUS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/1787 STEP NO--US/0000/70/011/002/0088/0092  
CIRC ACCESSION NO--AP0133692  
UNCLASSIFIED



2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0133692  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE ANGULAR  
DISTRIBUTIONS OF REACTIONS ON NUCLEI WITH NONZERO SPIN UNCOVER NEW  
POSSIBILITIES OF VERIFYING THE INDEPENDENCE OF THE COMPOUND NUCLEUS  
DECAY METHOD OF THE INPUT CHANNEL OF THE REACTION. FACILITY:  
ATOMIC ENERGY INST., USSR.

UNCLASSIFIED

ACC NR: AT7004854

SOURCE CODE: UR/3136/66/000/069/0001/0028

AUTHOR: Karadzhev, K. V.; Man'ko, V. I.; Chukreyev, F. Ye.

ORG: none

TITLE: Properties of Argon-36 and Argon-38 nuclei levels excited during the capture of protons by chloride isotopes

SOURCE: Moscow. Institut atomnoy energii. Doklady IAE-1069. Svoystva urovnoy yader A sup 36 i A sup 38, возбуждаемые при захвате протонов изотопами хлора, 1-28

TOPIC TAGS: excited nucleus, proton scattering, proton capture, chloride isotope, chloride, argon, argon isotope

ABSTRACT: A study was made of the nuclear reactions of  $Cl^{35}$  (p,d)  $S^{32}$  and  $Cl^{37}$  (p,d)  $S^{34}$ , and of the elastic scattering of protons by chloride in the 1.3-3.0 Mev proton-energy range. A basic difference was found to exist in the angular distribution of  $d$ -particles in the two reactions. A study of the angular distribution of  $d$ -particles and of cross-sections of elastic scattering made it possible to determine the spins, parity, and

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ACC NR:

AT7004854

normalized widths of 40 levels of the nucleus of Argon 38 and of 25 levels of Argon 36. It was found that for the great majority of levels,  $\sigma_{\alpha}^2 \gg \sigma_p^2$  : where  $\sigma^2$  is the normalized emission width of an  $\alpha$ -particle or proton, expressed in Wigner units. It was also found that the normalized  $\alpha$ -particle widths of both Argon 36 and Argon 38 are characterized by relatively narrow distributions near 0.1 and 0.02 respectively. The probable reasons for deviation from the Porter-Thomas distribution are discussed. The authors thank L. V. Groshev and P. E. Nemirovskiy for their discussion of the results obtained, and A. M. Pasechnikov and his associates for their work with the electrostatic generator used in this study. Orig. art. has: 8 figures and 4 tables. [Translation of authors' abstract]

[SP]

SUB CODE: 18, 20/

Card 2/2

USSR

UDC 620.193.43

CHUKREYEV, N. YA., VOROB'YEVA, N. P., ZIL'BERBERG, V. G., and KARPINOS, D. M.,  
Academy of Sciences UkrSSR, Institute of General and Inorganic Chemistry,  
Institute of Problems of Material Science

"On the Resistance of  $Al_2O_3$  Coatings on Nickel, Molybdenum, and Titanium in  
Melted LiCl-KCl Eutectic"

Moscow, Zashchita Metallov, Vol 19, No 2, Mar-Apr 73, pp 195-196

Abstract: The corrosion resistance in melted LiCl-KCl eutectic of  $Al_2O_3$  coatings (200  $\mu$ m thick, 12-15% porosity), applied in argon on wire specimens of Ni, Mo, and Ti, was investigated. In comparison with unprotected Ni-, Mo-, and Ti-specimens, the coating decreased the corrosion by 2.3-2.4 times at 400° and by more than 3-6 times at 500°; at the same time, aluminum oxide dissolved at rates of  $8.0 \cdot 10^{-5}$  and  $1.3 \cdot 10^{-4}$  g/cm<sup>2</sup> hr, respectively. The unprotected Ni-specimens corroded at 400° at the rate of  $3.6 \cdot 10^{-4}$  and at 500° at the rate of  $3.6 \cdot 10^{-3}$  g/cm<sup>2</sup> hr. The corresponding values for Mo are  $5.4 \cdot 10^{-4}$  and  $7.7 \cdot 10^{-4}$  and  $4.6 \cdot 10^{-4}$  and  $9.2 \cdot 10^{-4}$  g/cm<sup>2</sup> hr for Ti. The aluminum oxide coating on Ti proved to be non-resistant. Plasma oxide coatings can be applied to protect metals against corrosion under conditions of melted salts. A further increase of corrosion resistance would probably result by increasing the plasma flux temperature and by decreasing the coating porosity.

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Acc. Nr

AP0049989

Abstracting Service:

CHEMICAL ABST.

4-70

Ref. Code

4R0131

E.I.

CHUKREYEVA

82427t Dehydration, rehydration, and sensitivity of Troshkovskii clays to drying. Popov, A. D.; Shchetnikova, I. I.; Chukreeva, E. I.; Kelareva, E. I.; Gaeva, R. T. (Vost. Inst. Ogneupor., Sverdlovsk, USSR). *Ogneupory* 1970, 35(1), 23-9 (Russ). The temp. interval and the dehydration kinetics of the Troshkovskii clays, their sensitivity to drying, and the possibility to intensify the drying without forming cracks were studied. To study dehydration processes at high temps. all samples of clays were 1st dried to const. wt. at 60°. According to dehydration curves some samples (A) lose a small amt. of H<sub>2</sub>O at low temps. (100-200°). It is in abs. accord with DTA: on DTA curves up to 200°C slight initial endothermal effects are evident. Other samples (B) of the Troshkovskii clays lose nearly all adsorbed H<sub>2</sub>O at 100-200°. The amt. of H<sub>2</sub>O adsorbed is of 2 kinds; it is caused by the presence of Mg<sup>++</sup> and Ca<sup>++</sup> in the exchange com-

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plex. The dehydration of clays is considerably dependent on duration of heating. Samples (A) dehydrate almost fully at 100° during 20-30 min while samples (B) during 90-100 min. The dehydration is accelerated by increasing temp. to 150-200°. For all samples the escape of adsorbed water is complete at ~300°. Samples after thermal treatment again take up water. This rehydration of samples was detd. from the wt. changes of samples annealed at 100, 200, 300, and 500° and then exposed at room temp. to relative air moisture of 25 and 75%. The rehydration increases with increasing content of the montmorillonite in the clay. All samples after thermal treatment at 100° adsorb much more water than untreated samples. The thermal treatment >300° brings about a lower rehydration. The removal of adsorbed water from montmorillonite is the main cause of propensity of some Troshkovskii clays to cracking. Preliminary treatment of the Troshkovskii clays contg. montmorillonite at 300-400° achieves partial dehydration; also, it decreases rehydration and sensitivity to drying.

J. Jindra •

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19801928

USSR

UDC: 621.374.33

CHULAK, S. A., YUDIN, P. Ye.

"Analysis of the Transient Process When an Isolated Controlling Pulse of Limited Duration is Used for Actuating a Thyristor Shunted by an RC Network"

Tr. Proyektno-konstrukts. i tekhnol. in-ta tyazh. elektromashinostr. (Works of the Design and Planning Technological Institute of Heavy Electrical Machine Building), Khar'kov, "Elektrotyazhmash" Plant, 1970, 1, pp 132-136 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G268)

Translation: An analysis is made of physical processes which take place when a thyristor is switched into an active inductive load. Consideration is given to a method of shunting the thyristor with an RC network to ensure reliable actuation with any controlling pulse length. A procedure is given for calculating the parameters of the RC network. Experimental confirmation is given for the validity of the computational relationships. Bibliography of one title. Resumé.

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1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--KINETICS OF LEAD DISSOLUTION IN ORGANIC ACIDS. II. SOLUBILITY OF  
LEAD SALTS IN ACID SOLUTIONS -U-  
AUTHOR--(03)--CHULANOVA, G.A., GORELIK, G.N., RAVDEL, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 885-7  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--LEAD COMPOUND, CHEMICAL KINETICS, ACETATE, ORGANIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0438 STEP NO--UR/0080/70/043/004/0885/0887  
CIRC ACCESSION NO--AP0126191  
UNCLASSIFIED



2/2 012

UNCLASSIFIED

PROCESSING DATE---20NOV70

CIRC ACCESSION NO--AP0126191

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLYS. OF PB ACETATE AND PB TRICHLOROACETATE IN THE AQ. SOLNS. OF THE RESP. ACIDS WERE DETD. IN THE PRESENCE OR ABSENCE OF OXIDIZERS (H SUB2 O SUB2) AT 0DEGREES AND 25DEGREES. THESE DATA ARE REQUIRED FOR CALCG. THE DISSOLN. RATE OF PB IN THESE ACIDS IN THE REGION WHERE SALT REMOVAL IS LIMITING. THE SOLY. OF PB ACETATE IN ACOH INCREASES BY 20PERCENT IN THE PRESENCE OF H SUB2 O SUB2 (AT 25DEGREES, 640 AND 680 G-L. IN 3.4N AND 5N SOLNS. COMPARED TO 521.5 AND 580 G-L. WITHOUT H SUB2 O SUB2). SOLY. DATA ARE TABULATED FOR THE ABOVE AND ALSO FOR PBCL SUB2 IN TRICHLOROACETIC ACID SOLNS. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--THE INVESTIGATION OF CONTACT MELTING IN THE COPPER MANGANESE SYSTEM  
-U-  
AUTHOR--(02)-CHULARIS, A.A., BUDNIK, N.M.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 9-11  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--COPPER ALLOY, MANGANESE ALLOY, BIBLIOGRAPHY, METAL MELTING  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/2041 STEP NO--UR/0135/70/000/001/0009/0011  
CIRC ACCESSION NO--AP0118995  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROCESSES WERE INVESTIGATED THAT OCCUR IN CONTACT MELTING IN THE COPPER MANGANESE SYSTEM AT HIGH TEMPERATURES IN A VACUUM. A POSSIBILITY WAS DEMONSTRATED OF USING CONTACT MELTING IN HIGH TEMPERATURE SOLDERING.

UNCLASSIFIED

USSR

UDC 591.1

ZAL' SHAN, G. L., CHULIMOV, G. A., and YUROVA, K. S., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, USSR Academy of Sciences

"Dynamics and Principles of Saturation of the Organism With Inert Gases"

Moscow, Izvestiya Akademii Nauk SSSR, No 2, Mar/Apr 71, pp 192-203

Abstract: Maximum tolerable and minimum injurious (appearance of decompression sickness) oversaturation of the body with nitrogen, helium, and argon were determined and the laws governing the process of saturation of body fluids with these three inert gases were analyzed. Laboratory dogs were placed in a hyperbaric chamber and exposed to the gases at various pressures and for various periods. The results are presented in tables. The parameters determining the shape of the saturation curves and the period of half-saturation were calculated. On the basis of a comparison with analogous data previously obtained on humans, probable saturation curves applicable to the human body were constructed. The concept of a two-phase saturation process determined by different extracellular and intracellular transport mechanisms was established. A tricomponent mathematical model describing the concentration of an  $1/2$

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USSR

ZAL'TSMAN, G. L., et al., Izvestiya Akademii Nauk SSR, No 2, Mar/Apr 71,  
pp 192-203

indifferent gas in the extracellular and intracellular compartments as a  
function of time and diffusion characteristics was proposed.

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USSR

UDC 543.53:539.1.074.4.082

KARTASHEV, Ye. R., CHULKIN, V. L., SHTAN', A. S.

"Use of a Cerenkov Counter to Determine the Content of Certain Elements in Solutions by the Neutron Activation Method"

Tr. VNII Radiats. Tekhn. [Works of All-Union Scientific Research Institute for Radiation Technology], 1972, No 7, 118-123 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.996, by V. S. K.).

Translation: A table of elements is presented, solutions of which form isotopes during activation analysis upon bombardment by neutrons which emit high-energy beta particles. It is suggested that the concentration of these elements be determined using a Cerenkov counter as a detector. An installation is developed, consisting of an activation chamber (C) with neutron source surrounded by a moderator, a measurement C, systems providing for even pumping of the solution being analyzed through the measurement and activation C, and recording apparatus. The measurement C has a cylindrical shape with nipples for injection and withdrawal of the solution. The walls of the C are coated to provide diffuse reflection. The ends of the C are made of organic glass, in optical contact with the output windows of an FEU-56 photomultiplier.

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USSR

Kartashev, Ye. R., Chulkin, V. L., Shtan', A. S., Tr. VNII Radiats. Tekhn., 1972, No 7, pp 118-123.

Devices of this type can also be used to determine leakage of fissionable products in the cooling system of a reactor. 2 figures, 1 table, 5 biblio. refs.

2/2

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USSR

UDC 632.4.633.1(47+57)

VETROV, YU. F., KORSHUNOVA, A. F., MORSHCHATSKIY, A. A., KROKHRYAKOV, M. K.,  
and CHULKINA, V. A., All-Union Institute of Plant Protection, Leningrad,  
Irkutsk Agricultural Institute, All-Union Scientific Research Institute of  
Corn, Dnepropetrovsk, Altai Mountain Agricultural Experimental Station

"Root Rot of Grain in the USSR"

Leningrad, Mikologiya i Fitopatologiya, Vol 5, No 2, 1971, pp 148-155

Abstract: This is a comprehensive literature review of Soviet work in the field of grain root rot. During the last ten years, knowledge about root rot in wheat and other cereals has gradually increased. More than 55 works on this subject were published or submitted for publication in the USSR. Root rot occurs in zones of insufficient or unstable humidity. In the Irkutsk region 12.2-42.3%, and in some cases as much as 61.3-67.3% of the spring wheat is annually infected with root rot, whereas in the Saratov region, the losses are 0.5-4.0% and, in extreme cases, 7.0-10.0%. Losses in other areas of the Soviet Union are enumerated, together with the appropriate references. *Holminthosporium sativum* and *Fusarium avenaceum* were isolated in Eastern  
1/2



USSR

VETROV, YU. F., et al., Mikologiya i Fitopatologiya, Vol 5, No 2, 1971,  
pp 148-155

Siberia, as well as in the central steppes of the Ukraine, on many wild and cultivated grains, and *Ophiobolus graninis*, which attacks many grain cereals and is found also on corn root. *O. graninis* can survive in the soil for more than 10 years.

2/2

USSR

UDC 539.3

BAYEV, L. V., CHULKOV, P. P., Institute of Hydrodynamics of the Siberian Division of the USSR Academy of Sciences

"Calculating Laminated Plates"

K raschetu sloistykh plastin (cf. English above), Novosibirsk, 1969, 21 pp  
(from RZh-Mekhanika, No 3, March 1970, Abstract No 3V142)

Translation: Equations and boundary conditions, based on the straight line hypothesis, are derived for calculation of laminated plates constructed from rigid and low-stiffness layers. For the specially designed matrix B entering into the equation, and for the resolvent with respect to the displacement function gamma, a number of theorems are proven, from which the subdivision of the principal resolvents into equations of the biharmonic and :metaharmonic types follows, describing boundary effects due to self-equalizing moments. Metaharmonic equations can also be derived for another displacement function. Bibliography: 3 entries.  
Resume

1/1

USSR

UDC 621.382.3

KOLMOGOROV, G.D., CHULKOV, V.P.

"Study Of The Effect Of The Parameters Of Epitaxial Films On The Structural Parameters Of Transistors"

Elektron. tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 3-10 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B243)

Translation: The paper studies the effect of the parameters of epitaxial films on the successive diffusion of boron and phosphorous in the process of manufacturing epitaxial-planar non-cased transistors of n-p-n type. The analysis is conducted by experimental methods with statistical processing of the data by a program of regression analysis developed for the "Minsk-22" computer using "AKI-400" language. Linear regression equations are obtained which connect the film parameters with the structural parameters of the transistors; a comparative evaluation is made of the extent of influence of the film parameters and an interpretation of the results obtained is given. Summary.

1/1

- 92 -

USSR

UDC 621.382.3

KOLMOGOROV, G.D., CHULKOV, V.P.

"Analysis Of The Effect Of The Parameters Of Epitaxial Films And The Structural Parameters Of Transistors On The Electrical Properties Of The Devices"

Elektron.tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 11-16 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B239)

Translation: The effect is studied of the parameters of epitaxial films and the structural parameters of transistors on the electrical properties of the devices, the reliability is evaluated, and the physical nature of the effects acknowledged to be significant is analyzed. Regressed equations combining the electrical parameters of the transistors with the parameters of the film and the structural parameters of the devices are presented. Summary.

1/1

- 81 -

Acc. Nr.

AP0049307

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code

UR 0226

CHULKOV

V. P.

103085x Experimental study of the pressing of powdery materials. Mcerson, G. A.; Rasskazov, N. I.; Chulkov, V. P. (Mosk. Inst. Stali Splavov, Moscow, USSR). Porosh. Met. 1970, 10(1), 21-9 (Russ). The powders of Cu, Fe, W, and WC were studied. The coeffs. of lateral pressure and internal friction of the powder during pressing were detd. by elec. resistivity tensometric measurements. The coeff. of the lateral pressure for plastic metals increases with increasing pressing pressure, although slower than according to the proportionality curve from the relative d. of the briquet. For low-plastic metals (W) and for brittle materials (WC), the coeff. of the lateral pressure somewhat increases within the low-pressure region, but at  $>2$  ton/cm<sup>2</sup> it becomes practically const. The coeff. of the lateral pressure decreases somewhat for the fine-grained or the oxidized powder of the given metal as compared to the non-oxidized and coarser powder, which is due to the increased inter-particle friction. The use of an inactive binder has no effect on the coeff. of lateral pressure, thus interlocking is the fundamental interaction between such powders. The internal friction coeff. decreases with increasing pressure at low pressing pressures and it remains const. at high pressing pressures.

S. A. Mersol

REEL/FRA

19801124

USSR

UDC 669.71.411

CHULKOV, V. S., MIKHEICHEV, L. A., BONDAREV, B. I.

"Increasing the Quality of Ingots in Electric-Flux Refining"

Tekhnol. Legkikh Splavov. Nauchno-tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 6, pp. 12-14. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G166 by S. Krivonosova).

Translation: The structure, presence of flux corrosion, contamination according to technological tests, gas content, density, and mechanical properties of ingots of type AMg6 alloy produced by electric flux refining (EFR) with various flux bath applications are studied. EFR in the crystallizer, in a container, and with casting through glass cloth were compared. The testing of specimens in a fog chamber with 96-100% relative humidity at 25° showed that there was no flux corrosion. Following the various versions of purification, there were practically no differences in the contents of the components of the alloy (Mg, Si, Fe). The differences in level of contamination with oxide films were not great. However, the alloy produced by EFR was purer than an alloy poured through glass cloth.

1/2

USSR

CHULKOV, V. S., et al, Legkikh Splavov. Nauchno-tekhn. Byul. VILSa, 1970, No 6, pp 12-14

The gas content was lowest with refining in the crystallizer, highest with casting through glass cloth. Ingots produced by EFR had increased density and impact toughness. Refining in the crystallizer creates favorable conditions for delivery of the purified alloy to the crystallization zone. When the flux is applied in a separate container, repeated usage of the flux and pouring of ingots of any configuration are possible. 5 figs; 3 tables.

2/2

- 26 -

USSR

UDC 669.71.018.9.411

CHULKOV, V. S., MIKHENCHEV, L. A., and KURDYUMOV, A. V.

"Influence of Flux Composition and State on Microporosity and Gas Content of Ingots During Electric-Flux Refining"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], No 4, 1970, pp 34-36 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract 2 G166 by A. Tseydler)

Translation: The effect of flux composition and state on the gas content of alloys based on Al is studied. Two fluxes were used with compositions (in %): 1) KCl-MgCl<sub>2</sub> 90 and MgF<sub>2</sub> 10; 2) KCl 47, NaCl 30, Na<sub>3</sub>AlF<sub>6</sub> 23. To decrease the content of H<sub>2</sub> and microporosity in ingots of the alloys, fluxes must be used only in the liquid state, with holding in the liquid state before consumption for at least 30 minutes. 12 figures.

1/1



3

USSR

UDC 621.791.3:669.715+669.14.018.8

KOBYLYANSKIY, I. F., KONONENKO, Yu. F., GUSEV, V. R., TSVETKOV, Yu. F.,  
OSIPOVA, K. Ya., LEPANOV, N. S., and CHULKOV, Ye. I., Engineers

"Soldering of Aluminum and Its Alloys With Stainless Steel"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 76 pp 41-44

Abstract: A method has been developed for fluxless soldering allowing firm attachment of aluminum and its alloys to steel for parts and units working at temperatures up to 400°C. The hypoeutectoid alloy produced during soldering greatly limits the formation and growth of the intermetallide layer around the soldered joint due to the high heating rate to 640°C and low force of external clamping of the parts being connected (1 kg/cm<sup>2</sup>).

1/1

1/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SOME EXPERIMENTAL DATA ON THE CHANGE IN GAS EXCHANGE OF WHITE RATS  
UNDER THE INFLUENCE OF IONIZING RADIATION -U-  
AUTHOR--CHULKOVA, O.N.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOBIOLOGIYA; 10: 74-7, JAN-FEB 1970  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--IONIZING RADIATION BIOLOGIC EFFECT, WHITE RAT, RESPIRATION, X  
RADIATION, GASTROINTESTINAL SYSTEM, RADIOACTIVE ISOTOPE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1834 STEP NO--UR/0205/70/010/000/0074/0077  
CIRC ACCESSION NO--AP0127244  
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INCREASE IN THE GAS EXCHANGE ON THE 7TH AND 15TH DAYS OF TREATMENT OF WHITE RATS WITH A MIXTURE OF RADIOISOTOPES (INITIAL ACTIVITY OF 15 MU CI) WAS NOTED. DURING A YEAR AND A HALF, THE ELIMINATION OF THE ABSORBED DOSE REACHED 700 RAD; MOREOVER, NO CHANGE IN THE GAS EXCHANGE AT REST WAS OBSERVED. AFTER EXTERNAL X IRRADIATION AT A DOSE OF 300 R THERE WAS AN INHIBITION OF GAS EXCHANGE ON THE 6TH AND 15TH DAYS. THE COMBINED ACTION OF X IRRADIATION AND THE INTRODUCTION OF LOW CONCENTRATIONS OF A MIXTURE OF RADIOISOTOPES INTO THE GASTROINTESTINAL TRACT DID NOT DIFFER FROM THE EFFECT OF IRRADIATION ALONE ON THE GAS EXCHANGE. FACILITY: SCIENTIFIC RESEARCH INST. OF RADIATION HYGIENE, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 621.396.6-181.5(088.8)

SKLYARSKIY, Ya. A., TESEOGLU, O. M., CHULOK, M. P.

"A Method of Nondestructive Noncontact Inspection of the Surface of Thin Cylindrical Parts"

USSR Author's Certificate No 280676, filed 8 Apr 69, published 4 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V200 P)

Translation: A method is proposed for nondestructive noncontact inspection of the surface of thin cylindrical parts such as the axial leads of radio components. The procedure is based on flaw detection using light. In order to automate inspection, a light beam shaped to a rectangular cross section by a slot illuminator, the width of the beam being commensurate with the dimensions of the minimum flaw, while the length is greater than the wobble amplitude of the part to be checked, is allowed to fall on the surface being checked in a direction perpendicular to the axis of the part.

1/1

USSR

UDC 911.3.616.9:597.6(571.18)

KORSH, P. V., RAVDONIKAS, O. V., MAL'KOV, G. B., VORONIN, Yu. K., ZIMINA, V. Ye., KOSTYUKOV, V. P., IVANOV, V. S., FEDOROVA, T. N., YEGOROVA, L. S., RUDAKOV, V. A., ~~CHULOVSKIY, I. K.~~, and SHAYMAN, M. S.

"On Carrier Characteristics and Contacts With Vectors of Viral and Bacterial Infections Among Omskaya Oblast Wild Animals"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2, Omsk, 1970, pp 75-78 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.51)

Translation: A table is presented of species composition of oblast wild animals and their relative population by individual landscape subzones in Omskaya oblast (64 species). Transmission of infections with natural foci was established in 27 species for the following diseases: tickborne encephalitis, Omsk hemorrhagic fever, rabies, tickborne scrub fever, Q fever, tularemia, erysipelas, toxoplasmosis, and leptospirosis.

1/1

- 33 -

USSR

UDC 911.3.616.986.7(571.14)

CHULOVSKIY, I. K., RAYKHLIN, M. I., and KOVALERCHIK, R. Ya.

"Leptospirosis in Novosibirskaya Oblast"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2. Omsk, 1970, pp 144-147 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.87)

Translation: Over a 20-year period (1946-1965) there were 901 cases of leptospirosis registered in the oblast. In 1946-1957 *Leptospira hebdomadis* and *grippotyphosa* sero-groups prevailed. Later *L. pomona* prevailed with concurrent increase in the role of anthropurgic foci.

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- 34 -

USSR

UDC 911.3.616.986.7(571.14)

RAYKHLIN, M. I., CHULOVSKIY, I. K., and ALPATOVA, G. N.

"Problem of Sporadic Leptospirosis Incidence Among the Population of the Kolyvanskiy Rayon in Novosibirskaya Oblast"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2. Omsk, 1970, pp 148-149 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.88)

Translation: In 1968, 32 population points where leptospirosis was not recorded were studied retrospectively. Blood serum was investigated in 147 people who had suffered febrile disease similar clinically to leptospirosis in the May-September period. In 37 cases serum was found containing antibodies to *Leptospira* of serogroups: pomona, australis, bataviae and tarassovi in 1:100-1:1,000 titers.

1/1

Veterinary Medicine

USSR

BOLOTSKIY, I. A., Candidate of Veterinary Sciences; CHULOVSKIY, I. K., Senior Scientific Associate, and ARABYAN, A. M., Krasnodar Scientific Research Veterinary Station, Omsk Scientific Research Institute of Infections with Natural Foci, Ministry of Health RSFSR, and Georgian Zooveterinary Teaching Research Institute

"The Epizootiology of Leptospirosis"

Moscow, Veterinariya, No 2, 1971, pp 65-68.

Abstract: Leptospirosis in Krasnodar kray is most severe among cattle, and is usually caused by *L. hebdomadis*, although antibodies to *L. saxkoebing*, *L. wolffi*, *L. hardjo* and *L. sejroe* are also frequently recorded. Nearly half of the murine rodents trapped in farms and forests of this area had antibodies to various serotypes of *Leptospira*. Epidemiological survey of animals in Western Siberia using the microagglutination and lysis test showed infection of pigs, horses, deer, yaks and marals with 11 types of *Leptospira*. The disease can occur at any time of year, but is most common from April to October. The most common serotypes of *Leptospira* in Gruzinskoy SSR are *L. tarassovi*, *L. pomona*, and *L. icterohaemorrhagiae*.

1/1



USSR

UDC 632.95

VTOROV, B. G., KALMANOVSKIY, V. I., CHULPANOV, L. V., ~~SHESHENIN, V. A., and~~  
YASHIN, YA. I.

"Some Particulars in the Analysis of Pesticides by a Recombination Rate Constant Detector"

Tr. 2-go Vses. soveshch. po issled ostakov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, and Fodder and the External Environment), Tallinn, 1971, pp 47-50 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N404)

Translation: A recombination rate constant detector is used to analyze the residues of chlorine-containing pesticides in various materials in place of electron capture detectors. The recombination rate constant detector has a linear dynamic range of  $\sim 500$  (with respect to lindane), and higher sensitivity and stability than the electron capture detector.

1/1

- 50 -

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--DETERMINATION OF THE ENERGY OF HYDROGEN BONDING BY A GAS LIQUID  
CHROMATOGRAPHIC METHOD -U-  
AUTHOR-(02)-CHULPANOVA, L.V., YASHIN, YA.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 773-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDROGEN BONDING, CHROMATOGRAPHY, ORGANIC NITRO COMPOUND,  
PHENOL, CHLORINATED AROMATIC COMPOUND, ANILINE, TEMPERATURE DEPENDENCE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1381 STEP NO--UR/0076/70/044/003/0773/0774  
CIRC ACCESSION NO--AP0128781  
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0128781  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY OF H BONDS WAS ESTD. BY  
COMPARISON OF THE HEAT OF SOLN. ( $\Delta H$ ) OF 2 ISOMERS, ONE OF WHICH IS  
CAPABLE OF FORMING H BONDS WITH A MOL. OF THE SOLVENT. THE  $\Delta H$   
VALUES FOR THE PAIRS, M AND O NITROPHENOL, M AND O DIHYDROXYBENZENE AND  
P AND O CHLOROANILINE, DETD. CHROMATOG. ON THE BASIS OF THE TEMP.  
DEPENDENCE OF THE RETENTION VOLS. LED TO H BOND ENERGY VALUES OF 3.8,  
4.7, AND 1.5 KCAL-MOLE, RESP.

UNCLASSIFIED

USSR

UDC 616.986.7-057:313.13

CHULOVSKIY, I. K., Institute of Natural Focal Infections, Omsk

"Distribution of Leptospiroses Among Some Occupational Groups of the Population".

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973,  
p 141

Abstract: Ten years of observations on leptospirosis among employees of meat-processing combines and animal-raising farms in Western Siberia are summarized. Leptospira antibodies had been detected among 22.3% of the meat-processing employees, primarily those involved in initial processing, and among 12.1% of the animal-raising employees. In general the serotypes of Leptospira involved were identical for humans and animals, indicating a close epidemiological relationship, with the Australis group being detected most often among meat-processing employees. Though the Hebdomadis group is widespread among cattle it does not play a major role in human pathology. Incidence of infection by Leptospira among animal-raising employees does not differ from that among the rest of the rural population, probably because contact with animals is identical for these groups. The fact that a high percentage of meat-processing employees become seropositive within the 1st year of work indicates that

1/2

USSR

CHULOVSKIY, I. K., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii,  
No 3, 1973, p 141

Leptospira are in constant circulation among cattle destined for the slaughter  
house.

2/2

- 13 -

Alkaloids

USSR

UDC 542.953/.954

CHUMACHENKO, A. V., ZVONKOVA, YE. N., and EVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemistry imeni M. V. Lomonosov

"Synthesis of the Alkaloid Pilocarpine. The condensation of 1-Ethyl-2-carbalkoxymethyl-2-butenolide with Phthaloylglycye Chloride"

Leningrad, Zhurnal Organicheskoy Khimic, Vol 8, Vyp 5, May 72, pp 1100-1103

Abstract: The synthesis of dehydroaminomethyl pilopyl ketine hydrochloride was undertaken, since this is a possible key compound in the synthesis of the alkaloid pilocarpine. The sodium derivative of 1-ethyl-2-carboethoxymethyl or 1-ethyl-2-carbobutoxymethyl-2-butenolide was formed by reacting sodium suspended in ether or benzene with ethanol with the appropriate butenolide. This derivative is then reacted with phthaloylglycye chloride to form the condensation product: 1-ethyl-2-(phthalimidoacetocarbethoxy) or 1-ethyl-2-(phthalimidoacetocarbobutoxy)methyl-2-butenolide. The product was crystallized and its structure confirmed by UV and IR spectroscopy. Subsequently the condensation product was subjected to hydrolysis with simultaneous decarboxylation by HCl to give the desired pilopyl ketone hydrochloride. However, further acid hydrolysis also occurs, producing glycine hydrochloride, so that the desired salt is impure. The authors were unable to separate the two salts by chromatographic or physicochemical means.

1/1

USSR

UDC 51 + 631.4

CHUMACHENKO, I. N., Doctor of Agricultural Sciences, KAPTSYNEL', Yu. M.,  
Candidate of Biological Sciences, LASER, V. S., and PUSHENKOV, V. C., All-Union  
Institute of Fertilizers and Agro-Soil Science, VIUA

"Mathematical Methods for Studying the Optimum Phosphate Level in Soil"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 5, 1970, pp 86-90

Abstract: Field experiments with different levels of phosphate fertilizers, conducted in irrigated grey soils of cotton fields in Tadzhik SSR, showed that the optimum content of mobile  $P_2O_5$  is around 28-32 mg/kg of soil. With a soil content above 35 mg  $P_2O_5$ /kg of soil, the yield of raw cotton drops. Harvest data for raw cotton during three years of experiments showed that the ratio between the content of mobile  $P_2O_5$  in soil and the cotton yield is as follows:

$$y = 35.1 + 0.344 \cdot P - 0.5675 \cdot P^2, \text{ where}$$

y is the yield in centners per hectare, and P is mg  $P_2O_5$ /per kg of soil.

1/1

USSR

UDC 542.941.661.718.1

CHUMACHENKO, M. N., and SEREBRYAKOVA, I. F., Institute of the Natural Products Chemistry, Academy of Sciences USSR

"Reduction of Phosphorus to Phosphine in Organic Compounds by Means of Lithium Aluminum Hydride"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2314-2316

Abstract: The reduction of organophosphorus compounds with lithium aluminum hydride is selective and cannot be used for a general analysis of phosphorus. Reproducible results were obtained only after the solution of lithium aluminum hydride was centrifuged and filtered in a stream of nitrogen prior to its use in the reaction. Reduction of triphenyl phosphate, p-bis (diphenylphosphoryloxy)benzene, and of diphenylchlorophosphonate -- all compounds with P-OC<sub>6</sub>H<sub>5</sub> and P-Cl bonds goes fast and is quantitative in reagrds to the formation of phosphine. However, reduction of tributylphosphate and sodium dibenzylphosphate is sluggish and even with heating is not quantitative, unless the material is heated to 200°C. Even under these conditions the triphenyl phosphine is not reduced.

1/1



1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--1,4,BENZODIAZEPINES AND THEIR DERIVATIVES. III. SYNTHESIS AND  
CORRELATION BETWEEN THE STRUCTURE AND PHARMACOLOGICAL ACTIVITY OF  
AUTHOR--(05)-BOGATSKIY, A.V., VIKHLYAYEV, YU.I., ANDRONATI, S.A., KLYGUL,  
T.A., CHUMACHENKO, T.K.  
COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 5-9

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRANQUILIZER, ANTICONVULSANT DRUG, MUSCLE RELAXANT, HYPNOSIS,  
CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0540

STEP NO--UR/0450/70/004/001/0005/0009

CIRC ACCESSION NO--AP0137629

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF PHARMACOL. TESTS WERE GIVEN FOR 14 DERIVS. OF 1,3,DIHYDRO,(2H),1,4,BENZODIAZEPIN,2,ONE SYNTHESIZED EARLIER (ANDRONATI AND BOGATSKII, 1969). DETAILS OF IR SPECTRA WERE ALSO REPORTED. ALL THE COMPOS. COMBINED TRANQUILIZING, ANTICONVULSANT, MUSCLE RELAXING, AND HYPNOTIC ACTIVITIES; SOME OF THEM REVEALED ALSO SEDATIVE ACTIVITY. DISORDERS OF THE MOTOR ACTIVITY WERE OBSD. IN CERTAIN CASES. FACILITY: ODESS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

UDC:532.501.312

BORISENKOV, A. I., KOSTIKOV, O. N., CHUMACHENKO, V. I.

"Hydraulic Drag with Laminar Flow of a Liquid in a Channel Rotating About Its Axis"

Samoletostr. i Tekhn. Vozd. Flota. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Aircraft Construction and Airfleet Technology. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 32, pp 42-46  
(Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 11, 1973, Abstract No 11.34.27, from the resume)

Translation: Problems of the influence of rotation of a channel about its axis with laminar and laminarized flow of a fluid are discussed. Data are presented from experimental determination of pressure loss with laminar flow of a fluid in a channel rotating about its axis. 2 Figures; 11 Biblio. Refs.

1/1

USSR

UDC: 621.372.823

CHUMACHENKO, V. S.

"Separation of E- and H-Waves in a Periodic Elliptical Waveguide"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 71-74 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B92)

Translation: The paper deals with the problem of propagation of electromagnetic waves in a periodic annular waveguide of elliptical cross section. No limitations are placed on the ratios between the width of the metal strips and the width of the gaps between them, or on the ratio between the period of the structure and wavelength. Dispersion equations are found for electromagnetic waves propagating in the given structure. It is shown that E and H modes will always exist independently in a periodic elliptical waveguide. Bibliography of twelve titles. Resumé.

1/1

USSR

UDC 621.372.413

GORLACH, A. A., TRET'YAKOV, O. A., and CHUMACHENKO, V. S.

"The Natural Frequencies of a Cylindrical Resonator With a Dielectric and With a Periodic Structure"

V sb. Radioelektron. letatel'n. apparatov (Aviation Radioelectronics -- collection of works), Vyp.4, Khar'kov, Khar'kov. aviats. in-t, 1972, pp 125-127 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B121)

Translation: Characteristics are obtained of an equation for the natural frequencies of a cylindrical resonator on whose axis is located a section of cylindrical periodic structure of the reflection, diffraction grating type with a dielectric. A particular case of axially-symmetric E-oscillation is studied. Original article: two bibliographic entries. V.S.

1/1

USSR

UDC 621.365.82

ChUMAK, G. M.

"The CO<sub>2</sub> Laser. Chemical Excitation "

In-t yader. fiz. SOAN SSSR, IYaF 91-72 (Institute of Nuclear Physics, Siberian Branch of the Academy of Sciences of the USSR, News of the Nuclear Department), Novosibirsk, 1972, 17 pp. RZh-Fizika, No 9, Sep 73, Abstract No 9D776

Translation: The generation of radiation by the CO<sub>2</sub> molecule in the following mixtures at pressures of 12 - 100 millimeters of mercury is investigated: UF<sub>6</sub>+D<sub>2</sub>+CO<sub>2</sub>; ClF<sub>3</sub>+D<sub>2</sub>+CO<sub>2</sub>; F<sub>2</sub>+D<sub>2</sub>+CO<sub>2</sub>. A velocity constant is determined for the process DF(v=1)+CO<sub>2</sub>(0000) → DF(v=0)+ZO<sub>2</sub>(0001). The improvement in efficiency of the conversion of typical energy to laser radiation by 3 - 5 times over direct generation by the same mixtures (without the addition of CO<sub>2</sub>) is demonstrated. The mechanism of branching in the ClF<sub>3</sub>+D<sub>2</sub> reaction is discussed. Abstract by the author.

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1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--GENERATION IN THE 2.8 MU M RANGE INVOLVING VIBRATIONAL ROTATIONAL  
TRANSITIONS IN THE HF MOLECULE -U-  
AUTHOR-(03)-DOLGOVSAVELYEV, G.G.; POLYAKOV, V.A., CHUMAK, G.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
NR 4, PP 1197-1203  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--MOLECULAR KINETICS, PULSE SIGNAL, ILLUMINATION,  
ELECTROMAGNETIC WAVE GENERATION, GAS PRESSURE, URANIUM HALIDE, FLUORIDE,  
HYDROGEN, FLUORINE, ROTATIONAL SPECTRUM, HYDROGEN FLUORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/1524 STEP NO--UR/0056/70/058/004/1197/1203  
CIRC ACCESSION NO--AP0106280  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106280

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GENERATION OF WAVES IN MUF SUB6 PLUS H SUB2, OF SUB6 PLUS H SUB2 AND F SUB2 PLUS H SUB2 MIXTURES AT PRESSURES UP TO 120 MM HG IS INVESTIGATED. IT IS SHOWN THAT FOR A 10 MU SEC ILLUMINATION PULSE THE GENERATION DURATION IN F SUB2 PLUS H SUB2 MIXTURE IS MUCH LARGER. THIS SIGNIFIES THAT FORMATION OF INVERSE POPULATION OCCURS AS A RESULT OF A CHEMICAL REACTION.  
FACILITY: INST. YADERNOY FIZIKI SIBIRSKOGO OTD. AN SSSR.

UNCLASSIFIED



USSR

UDC 613.644-073.43-78

CHUMAK, P. N., MININ, B. A., and FALIN, N. I., Moscow

"An Instrument for Integral Hygienic Assessment of Noises"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 48-50

Abstract: A noise exposure meter developed by the authors (Inventor's Certificate No 290305) can be used to register noise produced within a large area or that experienced by a single worker over long periods of time without attendance. It employs a mercury capillary coulometer-integrator as the memory. An amplifier need not be used at noise levels above 100 db. Tests with the meter showed that it has a sensitivity of 10  $\mu$ amps at 100 db and can be used continuously at this level for 680 hours. Cumulative noise is read out in arbitrary units or in  $\mu$ w/hr/cm<sup>2</sup>. The integral noise assessment criterion provided by this instrument would be of value in public health studies when combined with the noise characteristics utilized traditionally (intensity, spectrum).

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USSR

UDC 632.951

KRIVENTSOV, YU. I., and CHUMAK, P. YA., Botanical Garden of Kiev University

"Ultracide as an Agent for the Control of Coccus hesperidum"

Moscow, Zashchita Rasteniy, No 5, May 73, pp 23-24

Abstract: Observations in hothouses of the Botanical Garden of Kiev University showed that the pest Coccus hesperidum survives for four generations. In experiments carried out on lemon, calla lily, oleander, and ceratostylis test plants infested with Coccus hesperidum, good results in the control of this pest were obtained by applying the Swiss systemic insecticide ultracide. Ultracide was used in concentrations of 0.1 and 0.15%. It proved more effective than rogor applied in the concentration of 0.1%

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**Titanium**

USSR

UDC 669.295.046.43

LYSTSOV, A. I., VASYUTINSKIY, N. A., and CHUMAK, T. A.

"Chlorination of Titanium Slag Coated With Hydrocarbon"

Sb. tr. Vses. N.-i. i proyekt. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 37-43 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G147)

Translation: A study is made of the special features of chlorination of ground Ti-slag whose particles are coated with a hydrocarbon shell. Slag coated with sooty C, can be chlorinated just as well as a slag-coke mixture; slag coated with pyrolytic C cannot be completely chlorinated. A mixture consisting of coated C of the initial slag, can be well chlorinated. Briquettes produced from slag coated with pyrohydrocarbon can be chlorinated at almost the same rate as the ordinary briquettes. 6 ill. Author's abstract.

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Acc. Nr.: **AP0029510**

Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 1, pp 61-66

FEATURES TO PECULIAR GLOBAL CESIUM-137  
AND STRONTIUM-90 REACHING THE POPULATION  
OF POLECIA BY DIFFERENT FOOD SUPPLY ROUTES

A. N. Marey, R. M. Barkhudarov, V. K. Chumak, E. V. Petukhova,  
E. B. Tyuryukanova, G. A. Kuznetsova, N. Ya. Novikova,  
S. B. Pozhivilova, G. A. Bogdanovich

The paper presents investigation data on the order of passage of abovementioned isotopes from the soil into food products with due regard for the soil nature and the accumulation of isotopes in the human body. The finding was that the extent of the passage of cesium-137 from the soil into food products fluctuated considerably and depended on the type of soil. Thus, in a soil consisting mainly of a sand fraction the passage of cesium-137 was more pronounced. Similar observation were made in respect to all of the objects examined. However, no differences in the migration of strontium-90 could be detected. Due to the high passage of cesium-137 into food products its content in the human body was high as well.

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